General

Guideline Title

World Gastroenterology Organisation global guideline: obesity.

Bibliographic Source(s)

World Gastroenterology Organisation (WGO). World Gastroenterology Organisation global guideline: obesity. Milwaukee (WI): World Gastroenterology Organisation (WGO); 2011. various p.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: World Gastroenterology Organisation (WGO). World Gastroenterology Organisation Global Guideline: Obesity. Munich (Germany): World Gastroenterology Organisation (WGO); 2009. 29 p.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

Drug Withdrawal

- October 8, 2010 – Meridia (sibutramine) : Abbott Laboratories and the U.S. Food and Drug Administration (FDA) notified healthcare professionals and patients about the voluntary withdrawal of Meridia (sibutramine), an obesity drug, from the U.S. market because of clinical trial data indicating an increased risk of heart attack and stroke. Physicians are advised to stop prescribing Meridia to their patients, and patients should stop taking this medication. Patients should talk to their health care provider about alternative weight loss and weight loss maintenance programs.

Recommendations

Major Recommendations

Key Management Points

- Diet and lifestyle modification, with or without medications, is the first step; if this fails, then surgery should be considered.
- The first treatment step is the basis for every subsequent step and consists of a diet, a less sedentary lifestyle, exercise, and behavioral modification. If weight loss of 5% to 10% is not achieved within 6 months, the next step is the same basic treatment combined with medication. The last step is again a diet, a less sedentary lifestyle, exercise and behavioral modification, but now combined with bariatric surgery.
- Obesity requires long-term care, and it is important that management should be provided in a multidisciplinary environment with support from physicians, medical specialists (internists), dietitians, surgeons, psychologists and physiotherapists.
- Providing education and information for children may be the best and least costly way of controlling obesity in the longer term.

Management

Management of Obesity

Ensure optimal medical care for patients who are obese:

- Educate staff about treating patients with respect.
- Offer obese patients the same level of care as nonobese patients, providing general preventive services and monitoring and treating ongoing medical conditions.

Encourage healthy behavior and self-acceptance, even in the absence of weight loss:

- Record weight without comments.
- Ask patients if they wish to discuss their weight or health.
- Review barriers among health-care providers—e.g., the perception that obesity is mainly due to the patient's lack of willpower.

Determine the obesity class—the level of excess weight:

- Assess overall fatness and central adiposity.
- Calculate body mass index (BMI) and measure waist circumference.

Assess comorbidities and risk status.

Is weight loss indicated?

- Prevent (further) weight gain.
- Prevent the complications of obesity.
- The goal is to favorably influence coexisting conditions associated with obesity by reducing excess weight, maintaining a lower body weight, and controlling associated risk factors.
- What is the recommended minimum weight loss?
- Assess the patient's expectations.

Evaluation of the patient's readiness:

- Reasons and motivation for weight loss.
- Previous attempts at weight loss.
- Support expected from family and friends.
- Understanding of risks and benefits.
- Attitudes toward physical activity.
- Time availability.
- Potential barriers to the patient's adoption of change.
- Discuss the patient's preferences regarding diet and physical activity.

Decide which treatment or combination of treatments is best:

- Which diet should be recommended?
- Discuss a physical activity goal.

Is the patient a candidate for surgery?

- BMI of 40 or higher

- BMI of 35 or higher, with comorbidities
- Severe sleep apnea
- Obesity-related cardiomyopathy
- Severe diabetes mellitus
- Severe joint disease
- Failure of medical weight control. Patients should have made previous attempts to lose weight.
- Absence of medical or psychological contraindications
- No risks, or acceptable risks, for surgery
- The patient should receive full information about the anticipated risks and results of the operation, understand the procedure and its risks, and be strongly motivated to comply with the postsurgical regimen.
- Medical and surgical care should be provided by a multispecialty team with experience in bariatric surgery and in perioperative and follow-up care.
  Note: Different countries use different BMI levels as indications for surgery: in the United States, the levels are 35 and 30; in continental Europe, the figures are 40 and 35. The United Kingdom guideline published by the National Institute for Health and Care Excellence (NICE) is very conservative, with a BMI >50 required for surgery.

Consider orlistat weight-loss medication:

- Combine with daily multivitamin treatment (due to possible malabsorption of fat-soluble vitamins). Inform the patient about side effects. There are two forms: orlistat 3 × 120 mg (Xenical or Zerucal) or 3 × 60 mg daily.

See Appendix II of the original guideline document for detailed information on other weight-loss medications.

Manage coexisting conditions:

- Hypertension: lower elevated blood pressure.
- Type 2 diabetes: lower elevated blood glucose levels.

Dyslipidemia:

- Lower elevated levels of total cholesterol, low-density lipoprotein (LDL) cholesterol, and triglycerides.
- Raise low levels of high-density lipoprotein (HDL) cholesterol by encouraging physical exercise.

Discuss strategies for weight maintenance.

Encourage the patient to set realistic goals.

Record keeping has been shown to be one of the most successful behavioral techniques for weight loss and maintenance. The patient should:

- Record food intake and energy expenditure.
- Keep track of body weight (at least once a week).

Use fat-reduced, fiber-enriched diets. Consider adding protein-rich and low glycemic index diets for weight maintenance.

See Appendix I in the original guideline document for information on nutrition and diet (including low-fat diets, low-carbohydrate diets, high-fiber diets, low-glycemic index or low glycemic load diets, high-protein diets, and specific commercial diets.)

Expand physical activity in line with the current fitness level and obesity-associated conditions:

- Walking
- Joining a gym
- Developing a home-based program of aerobic and resistance training

Treatment Outcome

General

A 5% to 10% reduction in weight may be sufficient for favorable modification of waist circumference, blood pressure, circulating cytokines, and (variably) fasting levels of glucose, triglycerides, and HDL cholesterol. This applies to individuals with a BMI of up to 40 and has been confirmed by many studies. At BMI levels above 40, a 20% to 25% weight loss is recommended, although without much evidence.

- A change in the treatment regimen should be considered if weight loss is less than 5% in the first 6 months.
- Willingness to achieve weight reduction is important in predicting success.

Lifestyle Intervention

Studies have shown that in comparison with standard care, lifestyle intervention:

- Significantly reduces body weight and cardiovascular risk factors.
- Has favorable effects, which are maintained for up to 3 years.

See Appendix III in the original guideline document for information on lifestyle changes.

Physical activity without a reduced calorie intake leads to limited weight loss results.

Treatment Combinations

Dietary and lifestyle interventions, along with pharmacologic weight loss treatment, provide modest weight loss and may improve markers of cardiovascular risk factors, although these benefits occur mainly in patients with cardiovascular risks.

Maintenance of Weight Reduction

The body has multiple mechanisms for modifying the energy balance to reestablish the original body weight. Weight loss induces a reduction in energy expenditure, hindering maintenance of weight loss. Failure to maintain weight loss is a common problem.

While short-term weight loss depends on caloric restriction, maintenance of weight loss mostly depends on the level of physical activity. For most people, long-term success is still difficult to achieve, and current therapies for obesity do not provide sufficient support for patients in adhering to the required lifestyle changes.

Predictive factors for maintaining weight loss include:

- Eating a low-fat, fiber-enriched, protein-rich diet
- Frequent self-monitoring of body weight and food intake
- High levels of physical activity
- Long-term patient–provider contact
- An initial greater weight loss during the active weight loss phase predicts a better weight maintenance thereafter.
- Weight loss of more than 2 kg in 4 weeks
- Frequent/regular attendance at a weight loss program
- Patient's belief that body weight can be controlled
- Behavioral interventions (may be helpful)

Protective factors against regaining weight: expending about 2500 kcal/week, through:

- Moderate activity for approximately 80 min/day (brisk walking)
- Or vigorous activity for 35 min/day (jogging)

Treatment and support options:

- Primary-care setting
- Commercial programs
- Internet-based weight maintenance programs

Obesity in the Elderly

Treatment Options in the Elderly

A variety of treatment options are available. Whether they are indicated in combination or singly depends on a variety of factors, including risk, patient preferences, and available resources.

- Lifestyle interventions, involving diet, physical activity, and behavioral modification
- Pharmacotherapy
- Surgery

Lifestyle Interventions

Lifestyle interventions should consist of a 500 kcal to 1000 kcal deficit diet with a sufficient amount of high-quality protein (1.0 g/kg) and adequate supplementation of calcium (1000 mg/day) and vitamin D (10–20 μg/day), as well as multivitamin and mineral supplements, combined with exercise and behavioral therapy. Increased physical activity and regular exercise are not essential for achieving initial weight loss, but can help in maintaining weight loss and preventing weight from being regained.

Behavioral therapy includes self-monitoring, goal setting, social support, stimulus control, and relapse prevention.

The combination of a moderate energy-deficit diet, increased physical activity, and behavioral modification leads to a moderate weight loss of 0.4–0.9 kg/week or 8% to 10% in 6 months, with improvements in obesity-related medical complications and physical dysfunction, and is associated with a low risk of treatment-induced complications.

Pharmacotherapy

Of the many drugs that have been developed to treat obesity, most have now been withdrawn from the market and only orlistat is currently approved for longer periods of administration in patients with a BMI ≥30 kg/m^2 and in patients with a BMI of 27–29.9 kg/m^2 in the presence of obesity-related comorbidity.

Weight loss with orlistat is 2–3 kg more than with a placebo and results in improved glucose tolerance and blood pressure, depending on the rate of weight loss. In addition, orlistat has beneficial effects on dyslipidemia that are independent of weight loss.

Bariatric Surgery

Bariatric surgery is indicated for individuals with severe obesity—i.e., with a BMI ≥40 kg/m^2 or a BMI ≥35 kg/m^2 with comorbidity. There are at present no guidelines for bariatric surgery in the elderly, but those who consider including the elderly have suggested that the values used in younger adults should be continued.

Recent research shows that older obese adults suffer from more comorbidity and require more medication before surgery than younger obese individuals. A significant loss of excess weight of 60% after 1 year and 50% after 5 years is observed after open or laparoscopic gastric bypass. This weight loss is associated with an improvement in obesity-related comorbidity and an overall reduction in medication requirements.

None of the published studies has provided any data on the number of patients in whom surgeons declined to perform the operation due to major life-limiting processes or unacceptable cardiorespiratory risk factors, or because the surgical risks outweighed the expected benefits. Most of the patients included in research studies have been women, and a very recent study in veterans has shown that sex difference is a factor that should be taken into account when assessing risk.

No survival benefit was observed during a mean follow-up period of 6.7 years in obese older men with obesity-related comorbidity. This might in part be explained by the shortness of the follow-up period, but it might also be related to the fact that bariatric surgery appears to be more difficult in severely obese male patients.

Nutrition Aspects

Weight loss in older persons may exacerbate the age-related loss of muscle mass and further impair physical function. On the basis of intensive research on sarcopenia (age-related reduction in skeletal muscle mass in the elderly) and sarcopenic obesity, dietary guidelines have been adjusted to prevent sarcopenic obesity and to guide the medical profession in supporting weight loss in the presence of sarcopenic obesity.

Treating obesity requires creating an energy deficit, and in individuals with sarcopenic obesity, or who are at risk of developing it, the energy deficit to be established is more moderate than usual (500 kcal, with a range of 200–750 kcal), with the emphasis on a higher intake of proteins of high biological quality. When the energy intake is restricted, protein intake has to be maintained or increased, as dietary protein and amino acids are the most effective means of slowing or preventing muscle protein catabolism.

There is no evidence that co-ingestion of protein and fat affects protein anabolism. Aging in itself thus does not reduce the anabolic response to adequate quantities of high-quality protein; instead, it is the presence of carbohydrates that blunts this response, explained by the effects of insulin resistance on muscle protein synthesis. A carbohydrate intake of less than 150 g/day is therefore advised. A modest bout of physical activity such as 45 minutes of treadmill walking restores the ability of insulin to stimulate protein synthesis.

Protein intake should also be strategically timed in such a way as to overcome other consequences of aging, such as blunting of the anabolic response due to changes in digestion, gastric emptying rate, splanchnic uptake, and peripheral utilization.

In addition, in contrast to younger people, skeletal muscle in older individuals is not able to respond to low doses of protein and amino acids (7 g), but 10–15 g of amino acids are capable of stimulating protein synthesis to a similar extent as in the young.

Other potential strategies for enhancing protein synthesis are including leucine in the diet, from a minimum requirement of 2 g/day to an optimum of 6–8 g/day.

Leucine-rich foods include legumes (soy beans) and animal products (fish, beef). Leucine increases protein anabolism and decreases protein breakdown. Adding leucine to a mixed nutrient meal in older individuals resulted in a 56% increase in muscle protein synthesis.

Physical Exercise Programs

The American College of Sports Medicine recommends a multi-component training exercise program (strength, endurance, balance, and flexibility) to improve and maintain physical function in older adults.

Resistance training has been investigated as an approach to counteract sarcopenia in older adults by stimulating protein synthesis and causing muscle hypertrophy, with increased muscle mass and muscle strength and with improved physical functioning and performance of both simple and complex activities.

The fear that endurance and resistance training might interfere with each other negatively has not been substantiated in recent research, and a combination of progressive resistance training and aerobic exercise is the optimal exercise strategy for simultaneous improvement of insulin resistance and functional limitations in the elderly. Aerobic exercise is a second-best choice.

Barriers and Perceived Constraints on Participation in Physical Exercise Programs

Several modulating factors were found that can be used to increase physical activity in the elderly. Only physical activity should be targeted, and it should not be coupled with health education. The focus should also be on group activity, encouraging moderate exercise intensity and activity, incorporating self-monitoring, and encouraging center-based activities involving intense contact with the intervention staff at structured times.

See Appendix V in the original guideline document for more information on obesity and the elderly.

Cascades

Stakeholders and Management Options

All stakeholders need to take action at global, regional, and local levels. Excess weight and obesity, as well as the related chronic diseases, are largely preventable.

Individual level. The patient should avoid energy-dense foods, limit the intake of alcohol, remember the nonsatiating effects of foods rich in calories such as fat and alcohol (alcohol having an additional disinhibitory effect on eating), and bear in mind the better satiation and satiety effects of proteins followed by complex carbohydrates.

- Achieve energy balance and a healthy weight.
- Limit energy intake from total fats and shift fat consumption away from saturated fats to unsaturated fats.
- Increase consumption of fruit and vegetables, as well as legumes and whole grains.
- Limit the intake of sugars (particularly in beverages).
- Increase physical activity.

Governments, international partners, civil society and nongovernmental organizations, and the private sector should:

- Shape healthy environments.
- Make healthier diet options affordable and easily accessible.
- Facilitate and promote physical exercise.

The food industry should:

- Reduce the fat and sugar content of processed foods and also the portion sizes.
- Increasingly introduce innovative, healthy, and nutritious choices (low energy density, fiber-rich, functional foods).
- Review current marketing practices to accelerate health gains throughout the world.

See Table 2 in the original guideline document for a decision scheme for weight-loss treatment.

Management Options Relative to Available Resources

Table. Management Cascade Relative to Available Resources

	Management Options by BMI			
Resources	25–30	30–35	35-40	>40
High/affluent	DEB	DEB + M	DEB	DEB
			M + SD	SD + surgery
		± Surgery	± Surgery	± Surgery
Medium/normal	DEB	DEB	DEB	DEB
			SD	SD ± surgery
Low/absent	DEB	DEB	DEB	DEB ± surgery

BMI, body mass index; DEB, diet, exercise, and behavior change (must be supervised); M, medication - only effective in case of moderate increase in BMI (must be supervised); SD, strictly supervised diets.

Notes:

Whatever treatment is given, diet, exercise, and behavioral changes should always be prescribed.
"± Surgery" is added to indicate that if the other strategies fail, then this is an option. Even in low-resourced countries, surgery is an option if obesity needs to be addressed. An open gastric bypass is not an expensive operation.

Table. Diet: Cascade Relative to the Resources Available

Resources	Diet Types
	There should always be an energy restriction of at least 600 kcal below everyday needs, which is in practice even more restricted than the 600 kcal (since to maintain 1 kg in body weight, 20–25 kcal is needed, so that someone weighing 120 kg needs to eat at least 2400 kcal in order not to slim)
High/affluent	• High-protein diets • Low-carbohydrate diets
Medium/normal	• High-protein diets • Low glycemic index diets
Low/absent	• No energy-dense foods • Reduced-fat diets

N.B.: The costs of the diet differ in countries in which fruits and vegetables are plentiful but meat is more expensive, and the reverse may be true elsewhere. It is of course difficult to emphasize energy restriction or reduction first, before discussing in detail the changes in macronutrients and diet composition.

Table. Surgery: Cascade Relative to the Resources Available

Resources Available	Surgical Procedure
High	Biliopancreatic diversion with duodenal switch

Resources Available	Surgical Procedure
Normal	• Laparoscopic gastric bypass • Adjustable gastric band • Sleeve gastrectomy
Low	• Open gastric bypass; in severe obesity, a long-limb gastric bypass • Vertical banded gastroplasty • Sleeve gastrectomy • Gastric band

See Appendix IV in the original guideline document for information about bariatric surgical procedures.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Obesity

Guideline Category

Evaluation

Management

Prevention

Risk Assessment

Treatment

Clinical Specialty

Endocrinology

Family Practice

Gastroenterology

Geriatrics

Internal Medicine

Nutrition

Preventive Medicine

Psychology

Surgery

Intended Users

Advanced Practice Nurses

Dietitians

Health Care Providers

Nurses

Physician Assistants

Physicians

Psychologists/Non-physician Behavioral Health Clinicians

Public Health Departments

Guideline Objective(s)

To provide a guideline for the appropriate assessment and management of obesity that is as globally relevant and accessible as possible

Target Population

People who are obese

Interventions and Practices Considered

1. Ensuring optimal medical care for patients who are obese through staff education and general preventive services and treatment
2. Encouraging healthy behavior and self-acceptance, even in the absence of weight loss
3. Determining the obesity class and the level of excess weight
    - Assessment of overall fatness and central adiposity
    - Calculation of body mass index (BMI) and measurement of waist circumference
4. Assessment of comorbidities and risk status
5. Prevention of further weight gain
6. Prevention of obesity complications
7. Assessing the patient's expectations and evaluation of readiness for weight loss
8. Deciding which treatment or combination of treatments is best
9. Diet and nutrition including low-fat diets, low-carbohydrate diets, high-fiber diets, low-glycemic index or low glycemic load diets, high-protein diets, and specific commercial diets
10. Evaluation for bariatric surgery
11. Orlistat and other weight-loss medication
12. Management of coexisting conditions, including hypertension, type 2 diabetes, and dyslipidemia
13. Strategies for weight maintenance
14. Physical activity
15. Behavioral modification
16. Specific considerations for the elderly

Major Outcomes Considered

- Incidence and prevalence of obesity
- Morbidity and mortality associated with obesity
- Effectiveness of weight loss on glucose tolerance, physical functioning, incidence of diabetes, blood pressure, dyslipidemia, and other obesity-related comorbidities
- Maintenance of weight loss

- Adverse effects of weight-loss medications
- Morbidity and mortality associated with bariatric surgery

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

World Gastroenterology Organization's (WGO's) Graded Evidence System

WGO's 'Graded Evidence' system is built to help National Societies of Gastroenterology and all those interested in the practice and research of gastroenterology keep track of the literature in topics covered by WGO Guidelines. Most guidelines are based on evidence which is out of date as they appear. Sometimes the 'lag time' is as much as 2–3 years. WGO's Graded Evidence system bridges this gap. WGO Guidelines are constantly reviewed and updates are built when new information becomes available.

Level 1 Evidence is collected from PubMed and includes meta-analyses, systematic reviews, randomized controlled trials and evidence-based practice guidelines.

Gastroenterology and hepatology journals scanned:

- Gastroenterology
- Hepatology
- Gut
- Journal of Hepatology
- Nature Reviews Gastroenterology and Hepatology
- American Journal of Gastroenterology
- Seminars in Liver Disease
- Clinical Gastroenterology and Hepatology
- Endoscopy
- Gastrointestinal Endoscopy

General medical journals scanned:

- New England Journal of Medicine
- Lancet
- JAMA-Journal of the American Medical Association
- Annals of Internal Medicine
- PLOS Medicine
- BMJ - British Medical Journal
- JAMA Internal Medicine
- Canadian Medical Association Journal
- BMC Medicine
- Cochrane Database of Systematic Reviews

Coverage

Graded Evidence is an iterative process - and for that reason need not be so concerned with searching both Medline, EMBASE and Biosis for example. All top gastrointestinal (GI) journals are covered by both Medline and EMBASE and in single one-off complex searches unique citations in one or the other are often due either to differences in database currency or differences in coverage of less important journals. In addition to cost issues, the generous republishing and copyright policies of the US National Library of Medicine (NLM) make Medline the preferred choice. The WGO Graded Evidence library is grateful to the NLM for making data available to clinicians and practitioners outside the US for free.

Search Strategies

Search strategies for each topic are based on a combination of controlled access and free text terms. The strategies aim for 'precision rather than 'sensitivity'. Highly sensitive search strategies as for example used by the Cochrane Collaboration when collecting literature reviews produce many irrelevant records. The advantage is these strategies retrieve all records which are relevant to a topic. But the 'number needed to read' is large and thus time consuming. Busy gastroenterologists probably prefer very precise search strategies in top GI journals and thus make sure every major article is found. The WGO Graded Evidence works along the lines of PubMed-Medline 'Clinical queries' features. Precise searches only find relevant information. Indexing errors may still be responsible for irrelevant or duplicate records. Case studies and animal studies are not usually included.

Graded Evidence records link directly to PubMed-Medline and from here the searcher can follow the various link options to find similar records or an indication of how to find full text.

Guideline-specific Methods

For the current update of the guideline, EMBASE.com, which includes Medline and the Cochrane databases, was searched from 2009 to March 1, 2011. The Review Committee is kept up to date with all current and new evidence through the Graded Evidence and Evidence Alert update services based on monthly high level evidence searches in EMBASE/Medline.

Number of Source Documents

- Meta-analyses, systematic reviews, practice guidelines: 54
- Clinical trials (randomised controlled trials only after 2012): 18

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Each citation is assessed in terms of the quality of an article and how relevant it is for the guideline topic in question. Articles are then scored by assigning one or several stars:

Grade Key

- Key Development: 3 stars
- Very Important: 2 stars
- Important: 1 star
- Special Mention: no star

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Graded Evidence

The World Gastroenterology Organisation (WGO) Guidelines Library contains practice guidelines written from a viewpoint of global applicability. WGO Guidelines are available in English, Spanish, Portuguese, French, Mandarin and Russian. WGO Guidelines go through a rigorous process of authoring, editing and peer review and are as evidence based as possible. Ultimate responsibility and editorial control lies with the WGO Guidelines Committee.

Each guideline includes references to other relevant guidelines. These are collected, summarized and re-published or linked-to by WGO for the benefit of members. In many instances, there will be more than one guideline. For example guidelines on Colorectal Cancer Screening are published by WGO, but the Scottish Intercollegiate Guidelines Network (SIGN) also publishes guidelines on this topic as does the New Zealand Guidelines Group and the Canadian Medical Association.

WGO is the only organisation however, who has adopted a global focus. Cascade-based WGO guidelines offer different treatment options for diagnosis and treatment depending on the resources available. A cascade is a hierarchical set of diagnostic or therapeutic techniques for the same disease, ranked according to the resources available.

WGO Guidelines are globally applicable by the nature of their cascades, which identify other ways of achieving the best possible outcome by taking the available resources into account. In addition, each guideline review team includes non-Western experts with direct knowledge of conditions in their regions.

Guideline-specific Methods

The Expert Committee convened to review the currency of the guideline in the last 5 years (2009-2013). Search results, level 1 evidence, are reviewed by the Committee members, and the guideline is updated after reaching consensus or as decided by the chair/co-chair of the Review Committee. All communication is by email and incidentally by Skype.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Peer Review

Description of Method of Guideline Validation

World Gastroenterology Organisation (WGO) Guidelines go through a rigorous process of authoring, editing and peer review and are as evidence based as possible.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Reduction in weight is associated with favorable modification of waist circumference; blood pressure; circulating cytokines; fasting levels of glucose, triglycerides, and high-density-lipoprotein (HDL) cholesterol; and other comorbid conditions.

Potential Harms

Risks of Weight Loss

Due to an increased flux of cholesterol through the biliary system, weight loss may increase the chances of cholelithiasis developing. Diets with moderate amounts of fat that trigger gallbladder contraction may reduce this risk. Slow weight loss—e.g., 0.5–1.0 kg/week—has been shown to prevent the formation of gallstones seen in patients with higher weight loss rates. Weight loss with adjustable gastric bands is associated with an incidence of gallstone formation that is no different from that in the normal population.

Adverse Effects of Medications

- Gastrointestinal side effects of orlistat include flatulence, fecal incontinence, oily spotting, urge, steatorrhea, and abdominal cramps. These occur if high-fat meals (>20 g fat/meal) are consumed. Absorption of fat-soluble vitamins is reduced with orlistat, but values never fall into the deficiency range. When fat-soluble vitamins such as vitamin D are supplied, they should be ingested 2 hours before ingestion of orlistat. More liquid stools may be beneficial for many elderly people who suffer from constipation, but it may also result in fecal incontinence, with impaired internal and external sphincter function.
- There is a potential (although low) risk of dependency and drug abuse with phentermine and diethylpropion (the agents are classified by the Drug Enforcement Agency in the United States as Schedule IV controlled substances). Blood pressure should be closely monitored in patients who have prehypertension or are receiving treatment for hypertension.
- Common side effects of sibutramine*: hypertension and tachycardia (related to adrenergic properties).

*Note from the National Guideline Clearinghouse (NGC): On October 8, 2010, Abbott Laboratories and the U.S. Food and Drug Administration (FDA) notified healthcare professionals and patients about the voluntary withdrawal of Meridia (sibutramine), an obesity drug, from the U.S. market because of clinical trial data indicating an increased risk of heart attack and stroke. Physicians are advised to stop prescribing Meridia to their patients, and patients should stop taking this medication. Patients should talk to their health care provider about alternative weight loss and weight loss maintenance programs. See the FDA Web site for more information.

Refer to Appendix II, "Pharmacotherapy," and Table III in the original guideline document for more information.

Weight Loss in Older Persons

Weight loss in older persons may exacerbate the age-related loss of muscle mass and further impair physical function. A slight decrease in bone mineral density and lean body mass was observed.

Risks and Complications of Surgery

- Mortality risks associated with bariatric surgery:
  - 30-day mortality rate 0.05%–2.0%
  - Common causes of death: pulmonary embolism, anastomotic leaks
  - Factors that contribute to increased mortality: lack of experience of the surgeon or hospital, patient's age, male sex, severe obesity—body mass index (BMI) ≥50, coexisting conditions
- Perioperative complications:
  - 13% of patients in the Swedish Obese Subjects (SOS) trials had perioperative complications
  - Pulmonary thromboembolism is the major cause of operative mortality; anticoagulant prophylaxis is imperative.
  - Anastomotic leaks
  - Wound infections
  - Bleeding
  - Incidental splenectomy
  - Incisional and internal hernias

    - Early small-bowel obstruction
- Postoperative gastrointestinal complications:
    - Nausea and vomiting occur in >50% of patients undergoing restrictive procedures
    - Dumping syndrome occurs in 70% of patients after Roux-en-Y gastric bypass
    - Nutrient deficiencies may occur after procedures with a component of malabsorption
    - Neurohormonally mediated symptoms: facial flushing, light-headedness, palpitations, fatigue, diarrhea
- Other complications include: dehydration, bowel obstruction, anastomotic leaks, strictures and adhesions, erosions and ulcers, internal and incisional hernias, cholelithiasis
- Patients often require readmission or reoperation for complications or treatment of coexisting conditions.

Refer to Appendix IV, "Surgery," in the original guideline document for additional information on complications of surgery.

Contraindications

Contraindications

- *Rimonabant* is contraindicated in Europe in patients with severe depression and/or patients receiving treatment with antidepressive medications.
- Contraindications to surgery include mental or cognitive impairment (precluding informed consent), severe coexisting medical conditions, unstable coronary artery disease, and advanced liver disease with portal hypertension.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Foreign Language Translations

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2009 (revised 2011 Oct)

Guideline Developer(s)

World Gastroenterology Organisation - Medical Specialty Society

Source(s) of Funding

World Gastroenterology Organisation (WGO)

Guideline Committee

Review Team

Composition of Group That Authored the Guideline

Review Team: Lisbeth Mathus-Vliegen (*Co-chair*) (The Netherlands); James Toouli (*Co-chair*) (Australia); Michael Fried (Switzerland); Aamir Ghafoor Khan (Pakistan); James Garisch (South Africa); Richard Hunt (Canada); Suleiman Fedail (Sudan); Davor Štimac (Croatia); Ton Lemair (Netherlands); Justus Krabshuis (France)

External Experts: Pedro Kaufmann (Uruguay); Eve Roberts (Canada); Gabriele Riccardi (Italy)

Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: World Gastroenterology Organisation (WGO). World Gastroenterology Organisation Global Guideline: Obesity. Munich (Germany): World Gastroenterology Organisation (WGO); 2009. 29 p.

Guideline Availability

Electronic copies: Available from the World Gastroenterology Organisation (WGO) Web site .

Print copies: Available from the WGO, 555 East Wells Street, Suite 1100, Milwaukee, WI 53202 USA; Phone: +1 (414) 918-9798; Fax: +1 (414) 276-3349; E-mail: info@worldgastroenterology.org.

Availability of Companion Documents

The following is available:

- Graded evidence. Professor André Elewaut and Professor John Fevery's essential reading. Electronic copies: Available from the World Gastroenterology Organisation (WGO) Web site .

French, Mandarin, Portuguese and Spanish translations of the original guideline are available from the WGO Web site .

Print copies: Available from the WGO, 555 East Wells Street, Suite 1100, Milwaukee, WI 53202 USA; Phone: +1 (414) 918-9798; Fax: +1 (414) 276-3349; E-mail: info@worldgastroenterology.org.

Patient Resources

None available

NGC Status

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